DOCKET FILE COPY ORIGINAL

State of Nebraska
Public Service Commission

300 THE ATRIUM
LINCOLN 68508

FRANK E. LANDIS
COMMISSIONER

PHONE
(402) 471-3101

96-45

May 22, 1998

Ms. Magalie Roman Salas
Office of the Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20554

Dear Ms. Salas:

Please find enclosed the Nebraska Public Service Commission's (NPSC) selection of a forward-looking economic cost study to be used as the basis for calculating federal universal service high-cost support for non-rural carriers in Nebraska, along with supportive documentation. We are unable to provide our submission via E-mail, and request that the Federal Communications Commission waive the requirement of filing in this form. We have included four computer disks (in WordPerfect format unless noted otherwise), and hard copies of several documents. The following documents are included:

1. An April 27, 1998, NPSC order selecting the Benchmark Cost Proxy Model 3.1 uncapped version (BCPM) as the platform upon which to calculate federal universal service support for Nebraska (hard and disk copies).

2. A May 22, 1998, NPSC order selecting the Nebraska specific forward-looking inputs to be utilized in the selected platform, with attachments. This order identifies where we deviate from the BCPM default inputs, and explains our rationale for doing so (hard and disk copies).

3. A demonstration that the model and inputs selected by the NPSC fulfills the FCC's ten criteria for state cost studies (hard copy attached to May 22 order and disk copy).

4. An Excel spreadsheet containing all the input data to be utilized in the cost study (disk copy in Excel format).

5. A spreadsheet containing all of the outputs for Nebraska's four non-rural carriers (disk copy in Excel format).

6. An index identifying what information is contained on each of the four disks (hard copy and disk copy).

Sincerely,

Frank E. Landis
Vice Chairman

cc: Sheryl Todd
Common Carrier Bureau
2100 M Street, N.W., Room 8611
Washington, D.C. 20037

Index

Disk 1

Explanation of files for submission.doc is a copy of this index.

BCPM Input Data Set for FCC Submission.xls is an Excel spreadsheet that shows all of the input data in the format used in the BCPM input screens.

FCCSubmit_manual.csv is a csv version of the Nebraska-specific inputs for the BCPM model. The file that can be copied to the Inputs subdirectory of the BCPM model and used to run the model.

FCCSubmit.ini is a file that will generate the views required in BCPM. Load this into the **Process** subdirectory of the **Views** subdirectory in the BCPM model.

Ne.crp is the LERG switching input data set. Load this into the **Lerg** subdirectory of the **Inputs** subdirectory of the BCPM model.

Disk 2

Has results for Aliant and GTE.

Disk 3

Has results for Sprint and US West.

Disk 4

Demonstration that the cost study fulfills the FCC's criteria for state cost studies.

April 27, 1998 NPSC Order selecting BCPM 3.1 uncapped version.

May 22, 1998 NPSC Order selecting Nebraska specific forward-looking inputs.

BEFORE THE NEBRASKA PUBLIC SERVICE COMMISSION

In the Matter of the Nebraska Public Service Commission, on its own motion, to conduct an investigation to determine which cost study model should be recommended to the FCC for determining federal universal service support.	Application No. C-1633 ORDER Entered: April 27, 1998

Appearances:

For the Nebraska Public Service Commission:	John Doyle Deonne Bruning 300 The Atrium 1200 N Street Lincoln, NE 68509
For AT&T Communications of the Midwest, Inc.:	Richard Wolters 1875 Lawrence Street Denver, CO 80202
For MCI:	Steven Seglin 134 South 13th Street Lincoln, NE 68508
For Aliant Communications:	Paul Schudel 206 South 13th Street Suite 1500 Lincoln, NE 68508
For GTE Midwest, Inc.:	Tom Kelly One Central Park Plaza Suite 1400 Omaha, NE 68102 Tom Mitchell 3050 "K" Street, NW #400 Washington, DC 20007 Rick Zucker 1000 GTE Drive Wentzville, MO 63385
For US West Communications:	Richard Johnson 1314 Douglas Street Omaha, NE 68102 Lynn Anton Stang 1801 California Street Denver, CO 80202
For the Benkelman, Cozad, Diller, Hemingford, Henderson, and Wauneta telephone companies:	Mark A. Fahleson 1200 Lincoln Mall, #102 Lincoln, NE 68508

BY THE COMMISSION:

The Commission opened Application C-1633 upon its own motion on September 23, 1997, to determine which cost study model it should recommend to the Federal Communications Commission (FCC) for determining the federal universal service support for the non-rural carriers in Nebraska. All certificated carriers were made a party to the docket, and notice was sent to all interexchange and local exchange carriers on September 25, 1997. A copy of this notice was made a part of this record as Exhibit 1. In addition to these carriers, The Nebraska Independent Telephone Association (NITA) was also made a party to these proceedings pursuant to its petition for formal intervention. The parties submitted two cost models for consideration by the Commission. US West Communications (USW) and Sprint (Sprint) sponsored the Benchmark Cost Proxy Model 3.1 (BCPM), while AT&T and MCI supported the HAI 5.0a model.

On October 9 and 10, 1997, the Commission held a workshop in which proponents of each of the cost models were given an opportunity to present their models to the Commission.

The Commission then held a prehearing conference on March 9 and 11, 1998, to determine procedural matters pertaining to this docket. A Commission order entered March 16, 1998, set out the decisions resulting from that conference.

Pursuant to the time frames established in that order, the Commission's staff economist, Dr. David Rosenbaum, filed his recommendation for a cost proxy model on March 24, 1998. Dr. Rosenbaum recommended the HAI Model. A copy of his recommendation was entered into the record as Exhibit 2. The Commission convened a hearing on March 31, 1998, to allow interested parties to ask Dr. Rosenbaum clarifying questions concerning his recommendation. At the hearing, Dr. Rosenbaum gave an oral summary of his recommendation and then answered questions from parties. The handouts and slides utilized by Dr. Rosenbaum at that proceeding were marked as Exhibit 3.

The March 31 hearing was continued to April 14, 15, and 16, 1998, to give all parties an opportunity to respond to Dr. Rosenbaum's recommendation and to present evidence. At the hearing, parties orally presented pre-filed testimony in an abbreviated form, along with any rebuttal testimony. The Commission also allowed each witness to be available for cross examination for a total of one hour per witness. After all parties had an opportunity to present their case, Dr. Rosenbaum offered his rebuttal testimony. Appearances at the hearing were made as shown above.

O P I N I O N A N D F I N D I N G S

One of the main objectives behind the establishment of a Universal Service Fund is to ensure:

> Consumers in all regions of the Nation, including low-income consumers and those in rural, insular, and high cost areas, should have access to telecommunications and information services . . . that are reasonably comparable to those services in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas." 47 U.S.C. 254(b)(3).

In the course of our proceedings in this docket, we conducted an extensive review of two cost models that attempt to estimate the forward-looking cost of meeting this universal service objective. Each model makes certain assumptions about the creation and operation of a hypothetical network. The cost estimates generated by each model are greatly influenced by the assumptions, parameters, and inputs that are used in the respective models. For the reasons detailed below, we recommend that the FCC use BCPM to determine the level of federal universal service support in Nebraska. At a later date, we will conduct a separate hearing to determine the specific inputs that should be used in BCPM.

Our expert gave the HAI model only a slight advantage based upon efficient design of telephone loop plant. At page five of his written recommendation, Dr. Rosenbaum stated:

> It could be argued that from a more cautious approach, BCPM's overbuilding more reliably ensures that plant will be in place to provide telephone service. However, in my opinion, [HAI] estimates adequate plant. It provides voice, video and graphics grade service to all customers. I do not endorse this cautious approach. (p. 5., Exhibit 2).

We appreciate Dr. Rosenbaum's work in this complex area and place great trust in his judgement. However, on this point we reach a different opinion. While HAI appears more efficient, it achieves this status by assuming a network of lesser quality. It is our opinion that it is more prudent to select a platform that we are confident will ensure a quality network in high cost areas of our state that is technically comparable to the network found in urban areas. The objective of universal service is to ensure that like services are available at similar costs, no matter where the subscriber resides. The record in this matter consists of volumes of exhibits, pre-filed testimony, and oral evidence. Upon review

of this evidence, BCPM appears to bring us closer to the objectives of universal service. Therefore, the Commission finds that we should recommend the FCC utilize the BCPM when determining federal universal service support for Nebraska.

Additionally, we recognize our responsibility to the ratepayers of Nebraska to ensure that universal service funds are, indeed, used for the placement and maintenance of quality networks in high cost areas. Accordingly, we fully intend to audit the application of universal service funds by eligible communications carriers.

O R D E R

IT IS THEREFORE ORDERED by the Nebraska Public Service Commission that the Benchmark Proxy Model 3.1 be, and it is hereby, selected as the preferred platform upon which to determine federal universal service support for Nebraska.

MADE AND ENTERED at Lincoln, Nebraska, this 27th day of April, 1998.

NEBRASKA PUBLIC SERVICE COMMISSION

COMMISSIONERS CONCURRING:

Chairman

//s//Lowell C. Johnson
//s//Rod Johnson
//s//Frank E. Landis
//s//Daniel G. Urwiller

ATTEST:

Executive Director

BEFORE THE NEBRASKA PUBLIC SERVICE COMMISSION

In the Matter of the Nebraska Public Service Commission, on its own motion, to conduct an investigation to determine which cost study model should be recommended to the FCC for determining federal universal service support.	) Application No. C-1633))) ORDER))) Entered: May 22, 1998

Appearances:

For the Nebraska Public Service Commission Staff:	John Doyle 300 The Atrium 1200 N Street Lincoln, NE 68508
For AT&T Communications of the Midwest, Inc. & T.C.G. Omaha, Inc.:	Loel Brooks 984 NBC Center Lincoln, NE 68508
For MCI Communications:	Steven Seglin 134 South 13th Street Lincoln, NE 68508
For Aliant Communications:	Paul Schudel 206 South 13th Street Suite 1500 Lincoln, NE 68508
For GTE Midwest, Inc.:	Tom Kelly One Central Park Plaza Suite 1400 Omaha, NE 68102 Tom Mitchell 3050 "K" Street, NW, #400 Washington, DC 20007 Ellen Quattrucci 3050 "K" Street Washington, DC 20007 Rick Zucker 1000 GTE Drive Wentzville, MO 63385
For US West Communications:	Lynn Anton Stang 1801 California Street Denver, CO 80202 John Devaney 607 14th St., N.W. Washington, D.C. 20005
For the Benkelman, Cozad, Diller, Hemingford, Henderson, and Wauneta telephone companies:	Mark A. Fahleson 1201 Lincoln Mall, #102 Lincoln, NE 68508

BY THE COMMISSION:

The Nebraska Public Service Commission (NPSC or Commission) opened Application C-1633 on September 23, 1997, to determine which cost study model it should recommend to the Federal Communications Commission (FCC) for determining federal universal service support for the non-rural carriers in Nebraska. All certificated carriers were made a party to the docket, and notice was sent to all such carriers on September 25, 1997. In addition to these carriers, The Nebraska Independent Telephone Association (NITA) was also made a party to these proceedings pursuant to its petition for formal intervention. Parties submitted two cost models for the Commission's consideration. US West Communications (USW) and Sprint Communications Company, LP (Sprint) sponsored the Benchmark Cost Proxy Model (BCPM), while AT&T Communications (AT&T) and MCI Communications (MCI) supported the Hatfield Model (now known as the HAI 5.0a model).

On October 9 and 10, 1997, the Commission held a workshop in which proponents of each of the cost models were given an opportunity to present their models to the Commission.

The Commission then held a prehearing conference on March 9 and 11, 1998, to determine procedural matters pertaining to this docket. A Commission order entered March 16, 1998, set out the decisions resulting from that conference.

Pursuant to the time frames established in the prehearing order, the Commission's staff economist, Dr. David Rosenbaum, filed his recommendation for a cost proxy model on March 24, 1998. Dr. Rosenbaum recommended the HAI Model. The Commission convened a hearing on March 31, 1998, to allow interested parties to ask Dr. Rosenbaum clarifying questions concerning his recommendation. At the hearing, Dr. Rosenbaum gave an oral summary of his recommendation and then answered questions from parties.

The March 31 hearing was reconvened on April 14, 15, and 16, 1998, to give parties an opportunity to respond to Dr. Rosenbaum's recommendation and to present evidence. At the hearing, AT&T, MCI, USW, and GTE presented testimony. The Commission allowed each witness to be available for cross examination for a total of one hour. After all parties had an opportunity to present their case, Dr. Rosenbaum offered his rebuttal testimony.

On April 27, 1998, the Commission voted to select the BCPM 3.1 uncapped version as the platform to recommend to the FCC. The Commission then scheduled a hearing to determine what inputs should be used in that model. Notice of a hearing on the inputs was faxed to parties on April 27, 1998. A notice rescheduling the hearing to May 11, 1998, was faxed to parties

on May 4, 1998. The hearing began in the afternoon of May 11 and concluded on May 12, 1998. By May 15, parties were to file any additional comments and objections they had to exhibits that had not been admitted into evidence at the close of the hearing. Appearances were made as shown above.

O P I N I O N A N D F I N D I N G S

In a May 8, 1997 *Report & Order,* in CC Docket No. 96-45, the FCC concluded that states could submit a forward-looking economic cost study as the basis for calculating federal universal service high cost support for non-rural carriers in lieu of using a federal mechanism. On February 27, 1998, in Public Notice DA 98-217, the FCC directed that along with the selection of a cost study, interested states should submit supportive materials, including spreadsheets and text documents, to enable the agency to determine whether a state's recommended model should be approved. The FCC directed further that interested states must also demonstrate that the cost study selected fulfills ten criteria set out in the notice. The text of this order identifies the areas in which the NPSC deviates from the Nebraska-specific BCPM default inputs and explains our rationale for doing so. A spreadsheet identifying the actual deviant inputs used is attached to, and made a part of, this order. Nebraska's answers to the ten criteria set out by the FCC are also attached hereto and made a part of this order.

In the course of our proceedings in this docket, we conducted an extensive review of two cost models that estimate the forward-looking costs of providing telecommunications and information services to rural, insular and high cost areas of the state. Upon review, we determined that the BCPM 3.1 uncapped model best estimates these costs. In our April 27, 1998, order selecting the BCPM we stated:

> While HAI appears more efficient, it achieves this status by assuming a network of lesser quality. It is our opinion that it is more prudent to select a platform that we are confident will ensure a quality network in high cost areas of our state that is technically comparable to the network found in urban areas. The objective of universal service is to ensure that like services are available at similar costs, no matter where the subscriber resides. The record in this matter consists of volumes of exhibits, prefiled testimony, and oral evidence. Upon review of this evidence, BCPM appears to bring us closer to the objectives of universal service.

> Therefore, the Commission finds that we should recommend the FCC utilize the BCPM when determining federal universal service support for Nebraska.

The cost estimates generated by the BCPM are greatly influenced by the assumptions, parameters, and inputs that are used in the model. In this order, we identify the inputs that should be utilized in the BCPM.

On May 11 and 12, 1998, we convened a hearing to determine what inputs and parameters should be used in the BCPM to most accurately reflect the universal service needs for Nebraska. Due to the proximity of the hearing to the FCC's filing deadline, we gave parties until May 15, 1998, to file additional comments and objections to exhibits that had not been admitted into evidence by the close of the hearing. After reviewing all objections and comments filed, the hearing examiner admitted all the exhibits into evidence, and each were afforded the appropriate amount of weight in our decision making process. After review of all evidence in this matter we issue this order setting out the inputs that we feel best meet the needs of Nebraska. While we understand that we currently are not under any mandate to make a recommendation, we feel we have an obligation to present our best estimate as to Nebraska's specific needs. After extensive hearing and study of the issues in this docket, we would neglect our responsibility to the citizens of Nebraska if we were to default to a FCC model that is currently nonexistent. The FCC examines these issues from a federal perspective. Since the FCC's selection has not been released, we cannot be sure that a federal perspective will meet the specific needs of a rural state like Nebraska. So within the time frames imposed upon us, we make this recommendation. We undertake this task knowing that as we explore the development of an intrastate fund, and as the FCC releases its model, that our opinions on the issues may change. Hence, we may adopt a different approach in the future.

Selected Inputs

BCPM contains thousands of default inputs and parameters. These inputs were developed from a nationwide perspective. At the hearing, USW, GTE, and AT&T proposed specific inputs to be used in the BCPM. USW proposed Nebraska specific forward-looking alternatives to the more general default inputs utilized in the BCPM. We are persuaded that USW's Nebraska specific forward-looking numbers are more accurate and useful in our state than generalized, nationwide inputs. Therefore, we adopt these inputs as a starting point for inputs in the BCPM model. These inputs are contained in an electronic file provided to the NPSC by USW. The inputs were marked "confidential" at the hearing and, therefore, have not been made a public portion of this order.

We then reviewed other information in the record to see if it was appropriate to deviate from the USW values to reflect forward-looking costs of a new entrant. We also reviewed the USW inputs to ensure that they met the FCC's ten criteria. The text of this order identifies where we deviate from the USW Nebraska-specific parameters and explains our rationale for doing so. We specifically identify the inputs in a spreadsheet attached to, and made a part of, this order.

We adopt the modifications to USW's state-specific proposed inputs explained below.

Sharing - Structure sharing refers to the allocation of costs among the incumbent local exchange carrier (ILEC) and other providers that may share space on the ILEC's structures. Among other things, these structures include poles and the placing of cable. The NPSC finds the majority of the structure sharing percentages recommended by USW are reasonable. However, contrary to USW's recommendation, we are unpersuaded that there will be no structure sharing in the "0-5" density zones. Even in these more remote regions of the state, there will be some opportunities for sharing as new homes and businesses are constructed.

Switching - The cost of switching is, in part, contingent upon the percentage of local and toll calls that a provider carries. While the majority of USW's switching inputs appear reasonable, we find their figures for the ARMIS percentages of local and toll calls are not reflective of the state average for non-rural LEC's. NPSC records demonstrate that the state average for local and toll calls are 81 percent and 19 percent respectively. GTE's proposed percentages for local calls and toll calls are closer to these statewide averages. Therefore, we find that the state averages in these categories are much more accurate, and we adopt them accordingly. For the other switching inputs, we accept the figures generated by USW.

For the reasons indicated below, we did not adopt either the BCPM default parameters or USW's proposed inputs for the following categories:

Loop Material Costs - Upon review of the evidence, we conclude that GTE's cost per foot of fiber cable and 26 gauge copper cable is more reflective of purchase prices in a competitive environment. One purpose of competition is to force carriers to become more efficient. The cable costs presented by GTE demonstrate greater efficiency than do the USW figures. For that reason, we adopt GTE's proposals for the cost per foot of fiber cable and for 26 gauge copper cable. GTE did not suggest inputs for the cost of 24 gauge copper cable. To maintain consistency with the other figures in this category, we have calculated the difference between GTE's 26 gauge cable costs and that proposed by USW. We then reduced USW's cost per foot of 24 gauge cable by these same percentages to reach what we determine

to be a competitively reasonable cost per foot for 24 gauge copper cable.

Depreciation - USW and GTE each propose specific economic lives and net salvage values for the various depreciation categories. The FCC has also provided a range that these values should fall within. In some instances, we have already established economic lives and salvage values for Nebraska's non-rural companies. Where reasonable, we have chosen to adopt these economic lives and salvage values or have adjusted them so that our values fall within the FCC-prescribed range.

The NPSC does not prescribe any economic life or net salvage value for "Land," and so we set an input value of "0" in these categories.

For each of the following categories, the NPSC previously adopted an economic life that falls within the FCC range. Therefore, our values should replace the default values for:

Special Purpose Vehicles
Garage Work
Other Work
Furniture
Conduit

For several categories, the NPSC has previously prescribed an economic life that falls below the FCC's prescribed range. For these categories, we elevate our prescribed economic lives to the bottom of the FCC range so that they will be appropriate for use in the BCPM:

General Purpose Computers
Switching
Circuit/DLC
Pole
Aerial Copper
Aerial Fiber
U/G Copper
U/G Fiber
Buried Copper
Buried Fiber

For the following depreciation categories, we have previously approved different economic lives that fall at various points within the applicable FCC range. For these categories, we have modified the prescribed lives to reflect the center of applicable ranges:

Motor Vehicles
Buildings
Office Support

For each of following categories, the NPSC previously adopted a net salvage value that falls within the FCC range, and is, therefore, appropriate for use in the BCPM:

Other Work Equipment
Buildings
Switching
Aerial Copper
Aerial Fiber

For several categories, the NPSC has previously prescribed a net salvage value that falls below the FCC's prescribed range. For these categories, we elevate our previously-prescribed salvage values to coincide with the bottom of the FCC range:

Motor Vehicles
Furniture
Office Support Equipment
General Purpose Computers
Circuit/DLC
Pole
U/G Copper
U/G Fiber
Buried Copper
Buried Fiber
Conduit

Finally, due to the nature of Nebraska telephone operations, the inputs for the following categories are inconsequential and so are given a salvage value of "0":

Air Craft
Special Purpose Vehicles
Garage Work Equipment
Operator Systems
Radio Systems
Submarine Cable

In considering the Tax Life of the various depreciation categories, we adopted the Nebraska specific inputs recommended by USW:

Cost of Money - The FCC has determined that a company's rate of return must either be the authorized federal rate 11.25 percent, or the state's prescribed rate of return for intrastate services. With this in mind, we adjust USW's proposed "debt ratio," "cost of equity," and "cost of debt" to enable us to reach the FCC's prescribed rate of return.

O R D E R

IT IS THEREFORE ORDERED by the Nebraska Public Service Commission that the Nebraska-specific inputs and parameters set forth in this order and attachments thereto be utilized in the Benchmark Cost Proxy Model 3.1 uncapped version to determine federal universal service support for Nebraska.

MADE AND ENTERED at Lincoln, Nebraska, this 22nd day of May, 1998.

NEBRASKA PUBLIC SERVICE COMMISSION

COMMISSIONERS CONCURRING:

Vice Chairman

//s//Rod Johnson
//s//Frank E. Landis
//s//Daniel G. Urwiller

ATTEST:

Executive Director

COMMISSIONER DISSENTING:
//s//Lowell C. Johnson

DISSENT OF COMMISSIONER LOWELL JOHNSON:

I respectfully dissent from the decision made by my colleagues in this docket. At the time of the cost model adoption, I expressed my very uncomfortable feeling about the direction of our action. My feeling has not subsided and only been enhanced by studies of other state commissions' refusals to adopt and submit a cost study model. Not only the commissions, but also telephone company associations, have urged that no action be taken with regard to a specific model for federal universal service fund purposes. One of the basic concerns is the obvious conclusion that any cost methodology selected for federal universal service fund purposes must likewise be utilized for a state universal service fund.

By forwarding our selection to the FCC, our Commission could be burdened with limitations on future actions. This will eliminate flexibility in our decisions and may not be in the interest or protection of Nebraska subscribers and providers.

I do not feel that actions in our limited time and attention provide us with a preponderance of wisdom which outweighs the collective knowledge, understanding and good judgement by the over 35 state commissions (+70 percent) who have rejected the FCC invitation to submit a cost model.

I vote no on forwarding a recommendation to the FCC.

Commissioner Lowell Johnson

Capital Cost Values	
	Value
Return on Equity	11.25
Return on Debt	11.25
Debt ratio	0.50
Rate of Return	11.25

Depreciation Values	
Economic Life	
Asset Class	Value
Land	0
Motor Vehicles	8.5
Special Purpose Vehicles	14
Garage Work	14
Other Work	14
Buildings	37
Furniture	17
Office Support	12.5
General Purpose Computers	6
Switching	16
Circuit/DLC	11
Pole	25
Aerial Copper	20
Aerial Fiber	25
U/G Copper	25
U/G Fiber	25
Buried Copper	20
Buried Fiber	25
Conduit	55

Net Salvage Value

Asset Class	Value
Land	0
Motor Vehicles	10%
Special Purpose Vehicles	0%
Garage Work	0%
Other Work	7%
Buildings	3%
Furniture	0%
Office Support	0%
General Purpose Computers	0%
Switching	3%
Circuit/DLC	0%
Pole	-75%
Aerial Copper	-20%
Aerial Fiber	-20%
U/G Copper	-5%
U/G Fiber	-5%
Buried Copper	-10%
Buried Fiber	-10%
Conduit	-10%

Loop Material Costs

Fiber Cable - Cost per foot

Underground		Buried		Aerial	
Strands	Value	Strands	Value	Strands	Value
288	$9.24	288	$10.43	288	$10.54
144	$8.27	144	$8.12	144	$8.64
96	$5.69	96	$5.54	96	$6.06
72	$4.51	72	$4.36	72	$4.86
60	$3.92	60	$3.77	60	$4.26
48	$3.45	48	$3.30	48	$3.78
36	$2.88	36	$2.73	36	$3.21
24	$2.30	24	$2.15	24	$2.71
18	$1.89	18	$1.81	18	$2.56
12	$1.68	12	$1.53	12	$2.08

Copper Cable 24 gauge - Cost per Foot						
	Underground		Buried		Aerial	
	Pairs	Value	Pairs	Value	Pairs	Value
	4200	$25.78	4200	$14.07	4200	$25.59
	3600	$24.11	3600	$12.96	3600	$28.98
	3000	$20.43	3000	$14.42	3000	$22.96
	2400	$18.20	2400	$14.67	2400	$18.07
	2100	$17.57	2100	$13.94	2100	$14.37
	1800	$15.74	1800	$13.84	1800	$13.27
	1200	$8.57	1200	$9.60	1200	$8.80
	900	$8.08	900	$7.92	900	$6.78
	600	$5.83	600	$6.26	600	$4.93
	400	$3.78	400	$3.98	400	$3.67
	300	$3.16	300	$3.45	300	$3.14
	200	$2.45	200	$2.84	200	$2.66
	100	$1.73	100	$2.22	100	$1.88
	50	$1.40	50	$1.98	50	$1.56
	25	$1.23	25	$1.97	25	$1.39
	18	$1.23	18	$1.97	18	$1.39
	12	$1.23	12	$1.97	12	$1.39

Copper Cable 26 gauge - Cost per Foot						
	Underground		Buried		Aerial	
	Pairs	Value	Pairs	Value	Pairs	Value
	4200	$25.78	4200	$19.13	4200	$25.59
	3600	$24.11	3600	$17.42	3600	$23.41
	3000	$20.43	3000	$16.84	3000	$22.96
	2400	$16.65	2400	$15.46	2400	$18.07
	2100	$14.60	2100	$13.04	2100	$14.37
	1800	$12.30	1800	$11.81	1800	$13.27
	1200	$8.57	1200	$8.32	1200	$8.80
	900	$6.52	900	$6.57	900	$6.78
	600	$4.86	600	$4.66	600	$4.93
	400	$3.54	400	$3.34	400	$3.67
	300	$2.98	300	$2.78	300	$3.14
	200	$2.33	200	$2.13	200	$2.66
	100	$1.67	100	$1.47	100	$1.88
	50	$1.36	50	$1.16	50	$1.56
	25	$1.20	25	$1.00	25	$1.39
	18	$1.20	18	$1.00	18	$1.39
	12	$1.20	12	$1.00	12	$1.39

Text Document

A. GENERAL AND SUPPORTING INFORMATION

1. State:
   Nebraska

2. Date of Filing:
   May 22, 1998

3. Contact Person & Telephone Number (also include electronic mail address):
   Peter Copeland, US West, (303) 896-4620, pcopela@uswest.com
   Dave Rosenbaum, NE PSC (402) 471-3101, cd05126@navix.net

4. Hardware Requirements (i.e., disk space, memory requirements, etc.):
   1 Gigabyte of Hard Drive Space for 52 state files

5. Software Requirements (i.e., operating system and version, spreadsheet software and version, etc.):
   Computer must meet the following requirements:
   Windows '95
   Pentium Processor 120 MHz (200 MHz - Recommended)
   16 MB RAM (32 MB Recommended)
   Microsoft Excel '97 with VB Data Access Objects

6. General Description of Study (identify whether study is based on the Benchmark Cost Proxy Model (BCPM) or HAI Model (identify version), a study or model prepared by a local exchange carrier (LEC), a state study or model for pricing unbundled network elements or other source):

BCPM 3.1 is a computer model designed to estimate benchmark costs for providing business and residential basic local telephone service nationwide. It is based in Microsoft Excel with a user interface developed in Visual Basic for Applications.

7. Supporting Information
   (a) Please provide supporting information that includes a detailed description of the proposed cost study and all underlying data, formula, computations, and software associated with the study. The documentation should include a complete listing of algorithms and formulas used in the study and in any pre-processing modules.

The supporting information should begin with an overview of the basic approach taken in the cost study, including the study's general methodology and basic assumptions.

(Note: If the state cost study is a version of a cost model that is already being considered by the Commission as the basis for determining federal high cost support, it is not necessary to provide all underlying documentation; if the proposal contains changes to the algorithms or inputs of a model under consideration by the Commission, however, such changes must be clearly documented.)

BCPM contains thousands of default inputs and parameters. These inputs were developed from a nationwide perspective. At the hearing, USW, GTE, and AT&T proposed specific inputs to be used in the BCPM. USW proposed Nebraska specific forward-looking alternatives to the more general default inputs utilized in the BCPM. We are persuaded that USW's Nebraska specific forward-looking numbers are more accurate and useful in our state than generalized, nationwide inputs. Therefore, we adopt these inputs as a starting point for inputs in the BCPM model.

We then reviewed other information in the record to see if it was appropriate to deviate from the USW values to reflect forward-looking costs of a new entrant. We also reviewed the USW inputs to ensure that they met the FCC's ten criteria. The following identifies where we deviate from the USW Nebraska-specific parameters and explains our rationale for doing so.

We adopt the modifications to USW's state-specific proposed inputs explained below.

Sharing - Structure sharing refers to the allocation of costs among the incumbent local exchange carrier (ILEC) and other providers that may share space on the ILEC's structures. Among other things, these structures include poles and the placing of cable. The NPSC finds the majority of the structure sharing percentages recommended by USW are reasonable. However, contrary to USW's recommendation, we are unpersuaded that there will be no structure sharing in the "0-5" density zones. Even in these more remote regions of the state, there will be some opportunities for sharing as new homes and businesses are constructed.

Switching - The cost of switching is, in part, contingent upon the percentage of local and toll calls that a provider carries. While the majority of USW's switching inputs appear reasonable, we find their figures for the ARMIS percentages of local and toll calls are not reflective of the state average for non-rural LEC's. NPSC records demonstrate that the state average for local and toll calls are 81 percent and 19 percent respectively. GTE's proposed percentages for local calls and toll calls are closer to these statewide averages. Therefore, we find that the state averages in these categories are much more accurate, and we adopt them accordingly. For the other switching inputs, we accept the figures generated by USW.

For the reasons indicated below, we did not adopt either the BCPM default parameters or USW's proposed inputs for the following categories:

Loop Material Costs - Upon review of the evidence, we conclude that GTE's cost per foot of fiber cable and 26 gauge copper cable is more reflective of purchase prices in a competitive

environment. One purpose of competition is to force carriers to become more efficient. The cable costs presented by GTE demonstrate greater efficiency than do the USW figures. For that reason, we adopt GTE's proposals for the cost per foot of fiber cable and for 26 gauge copper cable. GTE did not suggest inputs for the cost of 24 gauge copper cable. To maintain consistency with the other figures in this category, we have calculated the difference between GTE's 26 gauge cable costs and that proposed by USW. We then reduced USW's cost per foot of 24 gauge cable by these same percentages to reach what we determine to be a competitively reasonable cost per foot for 24 gauge copper cable.

Depreciation - USW and GTE each propose specific economic lives and net salvage values for the various depreciation categories. The FCC has also provided a range that these values should fall within. In some instances, we have already established economic lives and salvage values for Nebraska's non-rural companies. Where reasonable, we have chosen to adopt these economic lives and salvage values or have adjusted them so that our values fall within the FCC-prescribed range.

The NPSC does not prescribe any economic life or net salvage value for "Land," and so we set an input value of "0" in these categories.

For each of the following categories, the NPSC previously adopted an economic life that falls within the FCC range. Therefore, our values should replace the default values for:

Special Purpose Vehicles
Garage Work
Other Work
Furniture
Conduit

For several categories, the NPSC has previously prescribed an economic life that falls below the FCC's prescribed range. For these categories, we elevate our prescribed economic lives to the bottom of the FCC range so that they will be appropriate for use in the BCPM:

General Purpose Computers
Switching
Circuit/DLC
Pole
Aerial Copper
Aerial Fiber
U/G Copper
U/G Fiber
Buried Copper
Buried Fiber

For the following depreciation categories, we have previously approved different economic lives that fall at various points within the applicable FCC range. For these categories, we have modified the prescribed lives to reflect the center of applicable ranges:

Motor Vehicles

Buildings
Office Support

For each of following categories, the NPSC previously adopted a net salvage value that falls within the FCC range and is, therefore, appropriate for use in the BCPM:

Other Work Equipment
Buildings
Switching
Aerial Copper
Aerial Fiber

For several categories, the NPSC has previously prescribed a net salvage value that falls below the FCC's prescribed range. For these categories, we elevate our previously- prescribed salvage values to coincide with the bottom of the FCC range:

Motor Vehicles
Furniture
Office Support Equipment
General Purpose Computers
Circuit/DLC
Pole
U/G Copper
U/G Fiber
Buried Copper
Buried Fiber
Conduit

Finally, due to the nature of Nebraska telephone operations, the inputs for the following categories are inconsequential and so are given a salvage value of "0":

Aircraft
Special Purpose Vehicles
Garage Work Equipment
Operator Systems
Radio Systems
Submarine Cable

In considering the Tax Life of the various depreciation categories, we adopted the Nebraska specific inputs recommended by USW:

Cost of Money - The FCC has determined that a company's rate of return must either be the authorized federal rate 11.25 percent, or the state's prescribed rate of return for intrastate services. With this in mind, we adjust USW's proposed "debt ratio," "cost of equity," and "cost of debt" to enable us to reach the FCC's prescribed rate of return.

(b) Please identify the sources of all underlying data used in the study and state when these sources are included with this filing. If not, explain why not.

See above. In addition, a listing of the inputs selected, as well as the accompanying rationale, was set forth in Docket C-1633, Order dated May 22, 1998.

B. DEMONSTRATION THAT THE COST STUDY FULFILLS THE ORDER'S CRITERIA FOR STATE COST STUDIES

Criterion 1: The technology assumed in the cost study must be the least-cost and reasonable technology for providing the supported services that is currently being deployed. A model, however, must include the incumbent LECs' wire centers as the center of the loop network and the outside plant should terminate at incumbent LECs' current wire centers. The loop design incorporated into a forward-looking economic cost study or model should not impede the provision of advanced services. For example, load coils should not be used because they impede the provision of advanced services. Wire center line counts should equal actual incumbent LEC wire center line counts, and the study's or model's average loop length should reflect the incumbent carrier's actual average loop length.

(a) Describe the network technology for which costs are computed, including switch type used, feeder and distribution technology, digital loop carrier devices, and other electronic if any; type of interoffice technology; and any assumptions, such as maximum copper loop lengths or copper resistance constraints.

Switching

For large wire centers, BCPM uses a switch curve based on Lucent 5ESS and Nortel DMS-100 digital switches. The model has separate switch curves for host, remote, and standalone switches for both vendors, to support current and forward-looking deployment practices. For small wire centers, BCPM uses a default switch curve that includes Nortel, Siemens Stromberg-Carlson, Lucent, and Mitel switches.

Feeder Equipment

The Model allows for two DLC categories, each providing multiple size options of remote and central office terminal size. This permits placement of small DLCs in CSAs that serve a relatively small number of customers. Both large and small DLCs are assumed to be integrated DLC systems. In addition, the Model captures efficiencies garnered from large DLCs where appropriate. The decision to use either a small DLC or a large DLC is based on the number of lines the DLC can serve.

A typical DLC remote cabinet size for a large DLC, such as the "Litespan-2000", can serve only up to 1,344 lines. Whether more DLCs are placed in that CSA depends on whether sound engineering practices call for another DLC or whether it is optimal to divide a grid further, into smaller ultimate grids, each representing a CSA. For example, it is possible for a single CSA to serve 5,000 customers if a large number of customers are located in a single office complex In this case, multiple DLC systems would be installed to provision the 5,000 lines.

The large DLC Remote Terminal (RT) used in BCPM is the DSC Litespan LSC-2030 Remote Terminal Outdoor Cabinet which supports up to 1344 lines. BCPM

assumes that the Litespan RPOTS channel unit is used in the RT except in cases where distribution cable lengths exceed CSA standards. In these cases, a RUVG2 or REUVG channel unit is recommended per DSC Litespan Practice OSP 363-20-010 Issue 6, July 1997 at 5.3.2. The BCPM sponsor's transmission engineers use the REUVG card in actual networks. The REUVG is used on extended range loops in BCPM3 because for the modest increase in cost, it provides superior performance and significantly greater flexibility in application.

Feeder Cable

The type of cable used in the feeder system is determined based on the specified copper/fiber breakpoint. The copper/fiber breakpoint is a user adjustable input.[1] The default input for the copper/fiber breakpoint is 12,000 feet. A copper/fiber breakpoint of 12,000 feet requires placing copper in the feeder if the maximum loop length from the wire center to all customers within an ultimate grid is less than 12,000 feet. If the loop length for any customer in the ultimate grid exceeds 12,000 feet, fiber is placed in the feeder to serve all customers in the ultimate grid. For all loops, cable beyond the DLC site is copper.

Feeder cables are sized to accommodate the number of working lines based on total residential, business, and special access lines. The size of feeder cables is based on the number of actual working lines adjusted by a variable engineering fill factor.

The total capacity for a fiber feeder segment is the sum of the required large DLC fiber strands and required small DLC fiber strands. BCPM 3.1 determines the number of maximum size fiber cables and the size of the additional fiber cable to meet the capacity needs of the segment. The fiber feeder cable sizes available in the Model are 12, 18, 24, 36, 48, 60, 72, 96, 144, and 288 strands.

In selecting fiber vs. copper technology, BCPM recognizes impact of duct congestion in urban areas. Copper technology in dense areas can quickly result in large numbers of full size cables in the duct runs along the main feeders or initial subfeeder segments. Costs are increased for deeper or wider trenching and larger manholes. BCPM uses fiber and electronics where grids must be served with more pair than in a single maximum sized cable.

BCPM allows user to adjust economic crossover based on user specific studies or constraints.

The feeder cable is connected to distribution cable at a feeder/distribution interface, commonly called an FDI. The FDI connects many distribution cables to a feeder cable.

---

[1] The Model allows the user to set the copper/fiber break point between 6,000 feet and 18,000 feet, given 3,000 foot increments.

Distribution Equipment

The BCPM distribution technology is designed to support a transmission rate of 64Kbps on all loops. All customers within 12,000 feet of the central office are served with 26 gauge copper facilities. Customers beyond this distance are served from a Digital Loop Carrier (DLC) system connected to the central office by fiber facilities.

In determining the number of FDIs to install in an ultimate grid, the Model reviews the cable sizing used in the grid. When the distribution cable sizing exceeds 1,200 pairs, the Model places an FDI at the road centroid within each populated distribution quadrant. Thus, the FDI is placed at the center of the DA.

If there are no roads and, therefore, no population located within a particular distribution quadrant, no distribution plant is placed in that distribution quadrant. Feeder cable, consisting of horizontal and vertical connecting cable, links the DLC to the FDI within non-empty quadrants.

When the distribution cable sizing does not exceed 1,200 pairs, the Model allows for cost savings from placing fewer FDIs. More precisely, for ultimate grids that are served by distribution cables totaling less than 600 pairs, the algorithm essentially computes the cost of placing a single FDI within those ultimate grids. This is tantamount to co-locating the FDI with the DLC. In such cases, horizontal and vertical connecting cable[2] is placed from the ultimate grid road centroid to the road centroid of a non-empty quadrant's road reduced cluster.

Within the Model there are a number of rules that are used to select specific pieces of equipment to be used in the distribution plant. Among those rules with the most impact are:

a. Within a grid, if the length of copper from the DLC to the last lot in a quadrant is less than 11,100 feet, 26 gauge cable is used to serve all customers. In those circumstances where the distance from the DLC to the last lot is greater than 11,100 feet, 24 gauge wire is used in all cables to and within the distribution quadrant. Where distances exceed 13,600 feet, extended range plug-ins are installed on lines that exceed 13,600 feet.

b. The mix of aerial, buried and underground facilities is determined by terrain and density specific to that grid.

c. Exterior Drop terminals are provided at each point where drops connect branch cables and are sized for the number of connecting drops.

d. Indoor building terminals are placed on each multi-tenant building and are sized for the number of lines terminated at that location.

---

[2] While this is typically considered distribution cable, the Model has fixed the classification of this cable as feeder. In a future release of BCPM, this cable will be classified differently.